

## Chapter 21

# Rorschach Test

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THE nature of the Rorschach test as it was used is such that the test results cannot be treated adequately in a statistical manner. We shall, therefore, limit the statistical treatment to a minimum and present only the individual case interpretations before and after operation.

Each record was scored for all of the generally accepted Rorschach factors. In general, Klopfer and Kelley's ('42) scoring system was adhered to because of the finer nuances which this system permits. For classification of location, the D (large details) and Dd (small details) were scored according to Beck's norms, and the F+ and F- scoring also follows Beck ('44). Form responses which were not found in Beck's norms were simply scored as F without a suffix.

The first step in the analysis was to determine the relationships between the Rorschach factors and the other variables in the psychologic battery. In order to limit the number of correlations to a manageable number, certain groupings of factors had to be undertaken. The grouping was guided by the number of responses found for each factor in our cases as well as by the psychologic characteristics of the factor in question. The factors dealing with location of the responses were divided into two groups, the whole responses being placed in one category and all the other types of locations being placed in the second category. The determinants were classified into three groups: form responses (F+, F- and F), color responses (C, FC and CF), and movement responses (m, FM and M). The total number of responses (R) and the measures of reaction time (RT) were treated in the usual manner.

### CORRELATIONAL ANALYSIS

The Rorschach factors themselves showed the following intercorrelations. In each instance use was made not of the absolute frequency of response but of relative frequency in order to compensate for the high degree of variability in the total number of responses from patient to patient. The two location categories (W and non-W) showed a correlation of  $-.92$  between themselves but did not correlate significantly with any of the other Rorschach factors. The determinants showed negative correlations of  $-.40$  between F and M and  $-.61$  between F and C. Reaction time to the first response on each card correlated negatively with C ( $-.45$ ) and with F ( $-.61$ ) but negligibly with all the other factors.

Since there were some sixty additional test scores available on each of the

patients, the correlations of the Rorschach factors with the other test scores were computed. The results indicated that the number of responses, R, was significantly correlated with intelligence and learning measures. The location categories did not show significant relationships with any of the other tests. The proportion of Form responses (F) showed a negative correlation (-.47) with a measure of learning variability (Paired Associate Semi-meaningful). The proportion of Movement responses (M) was correlated .37 with the Wechsler-Bellevue Comprehension subtest. The average Reaction Time to the first response to each card was found to be correlated negatively with the intelligence test scores and learning.

#### INDIVIDUAL ANALYSIS

The analysis of each individual record together with the tabulation of scores is presented in the following pages. Since all of the patients included in this study were chronic mental patients, the diagnostic features of the Rorschach test were not our primary concern, nor did we try to get a full personality evaluation of the patient since the psychiatric interview and the case history gave sufficient data for making the personality evaluation more directly. Our chief purpose in giving the Rorschach test was to determine whether or not any changes occurred between the two givings of the test. To this end, formal analysis of the scoring and subjective analyses of the meaning of the scores were undertaken to determine the areas of change and little or no attention was paid to the invariant area of personality in each case. Only those data which demonstrate these changes will be presented and only those aspects of the personality which they reflect will be discussed.\*

At the beginning of each of the following case analyses there is a statement of the preoperative and postoperative (R<sub>2</sub>) scoring of each analysis. The symbols are the conventional ones of Klopfer and of Beck. They are used as follows. R=total number of responses; *Locations*, W=whole blot; W\*=intended use of whole blot but part or parts omitted; D=large detail or portion of blot; Dd=small details or portions of blot; S=white space. *Determinants*, M=figures in human-like action; FM=animals in animal-like action; m=abstract or inanimate movement; K<sup>≡</sup>=shading as diffusion; k=shading as three dimensional projected on two dimensional; FK=shading as three dimensional in perspective; Fc=shading as surface appearance or texture; c=shading as texture; C'=Achromatic surface color; FC=definite form with bright color; CF=bright color with indefinite form; C=color only; F=form; F+ or F-=form level (Beck's tables.) *Content*: H=human figures; Hd=parts of human figures, not anatomical; A=animal figures; Ad=parts of living animals; At=human anatomy; Obj=all kinds of man-made objects; Na=nature; Geo=geographical concepts; Pl=plants; Pop=popular; Rej=rejected card; RT uncol=reaction time in seconds to uncolored cards; RT color=reaction time in seconds to colored cards.

Superior, lower-case italic a following an area number means that only part of the area thus designated was excised (example area 6<sup>a</sup>).

Case 1 (Control): Original test: R 51, W 9, W* 5, D 35, M 4, FM 3, m 3, K 1, F+F 25, F- 7, Fc 6, cC' 0, FC 1, CF 1, HHd 18, AAd 19, At 3, Obj 8, Clouds 1, Other 2, Pop 4, RT uncol 185, RT color 1.	Postoperative R <sub>2</sub> : R 38, W 8, W* 1, D 24, S 1, Dd 4, M 2, FM 0, m 0, K 1, F+F 30, F- 1, FC 0, cC' 2, FC 2, CF 0, HHd 16, AAd 12, At 3, Obj 4, Clouds 1, Other 2, Pop 4, RT uncol 144, RT color 119.
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\* The following interpretations are made according to conventional Rorschach procedure. It does not necessarily follow that the author is invariably convinced of their objective or subjective validity.

The underlying trend was basic aggression and hostility which were kept in check either by the anxieties which the overt expression of these tensions were likely to arouse or by some other inhibitory process. The tendency to see mutilated figures gave rise to a good number of bizarre responses indicative of a schizophrenic process. No change occurred from the first test to the second test in this regard. Depressive schizophrenic trends were a little more evidenced in the post-test. At the time of the first test the mood was predominantly one of elation with free-floating anxiety. The subject was more stimulated by colored than by the uncolored cards and this differential was especially marked in the retest indicating an increase in his extratensive trend. He was generally slower in his responses to the second test, but he still reacted more quickly to the colored than the uncolored cards. His aggression also increased as shown by the increase in the number of dismembered human beings reported. In general this patient changed in his degree of control on the retest, showing less control over his affective life but greater restriction on his intellectual or inner strivings.

Case 2 (Area 6\*, 8): Preoperative: R 18, W 5, W\* 1, D 12, Dd 0, M 3, FM 2, F+F 12, F- 0, Fc 0, FC 0, CF 1, HHd 6, AAd 10, At 0, Obj 1, Other 1, Pop 6, Rej 1, RT uncol 182, RT color 105. Postoperative R2: R 25, W 5, W\* 2, D 16, Dd 2, M 3, FM 0, F+F 16, F- 3, Fc 1, FC 1, CF 1, HHd 6, AAd 12, At 1, Obj 4, Other 2, Pop 5, Rej 0, RT uncol 54, RT color 75.

Before operation this patient was highly constricted and rigid. He was totally unresponsive to emotional stimulation and what little emotional feeling he experienced usually led to impulsive behavior. After operation his personality became more dilated, and he was more productive. His capacity to control his emotional outbursts increased and a certain degree of tactfulness and sensitivity to the needs of others became apparent. This gain, however, was not without its negative aspects. By reducing the degree of rigidity which he exhibited preoperatively, his degree of control lessened also and a certain deficiency in dealing adequately and realistically with his environment became evident.

Case 3 (Area 6\*, 9\*): Preoperative: R 11, W 2, D 9, M 1, FM 1, F+F 9, F- 0, HHd 5, AAd 4, At 1, Obj 1, Pop 3, Rej 2, RT uncol 121, RT color 144. Postoperative R2: R 8, W 1, D 7, M 0, FM 0, F+F 6, F- 2, HHd 2, AAd 6, At 0, Obj 0, Pop 2, Rej 2, RT uncol 88, RT color 45.

Despite this patient's initially limited imagination and limited contact with reality, he had a few redeeming features such as the response of a fairy-like figure in the last card. This imaginative touch was wiped out by the operation, when he seemed very much more limited and lacking in imagination and in contact. He was highly stereotyped in his reactions, compulsive, and less capable of appreciating reality. Before operation the neurotic affective features were more prominent; after operation depressive features predominated.

Case 4 (Area 46): Preoperative: R 19, W 4, W\* 0, D 13, Dd 2, M 1, K 1, F+F 16, C' 1, HHd 8, AAd 9, Na 1, Clouds 1, Pop 3, RT uncol 145, RT color 206. Postoperative R2: R 18, W 3, W\* 1, D 10, Dd 4, M 3, K 0, F+F 14, C' 1, HHd 11, AAd 7, Na 0, Clouds 0, Pop 3, RT uncol 70, RT color 173.

This patient exhibited considerable amount of anxiety, both before and after the operation but there was a slight reduction in the postoperative test permitting him to express some of his inner feelings and imagination to better advantage. In his preoperative as well as in the postoperative test he appeared to have the capacity for being an outgoing individual but in his actual life attainment he was quite withdrawn. This conflict between his essentially outgoing nature and the need for withdrawal produced by his anxieties was one of his basic conflicts. The operation seemed to have lessened this struggle somewhat and he was more at ease with himself.

Case 5 (Control): Original test: R 13, W 7, W\* 2, D 4, M 1, FM 1, F+F 8, F- 3, HHd 2, AAd 5, At 5, Pl 1, Pop 3, RT uncol 240, RT color 285.

Postoperative R2: R 11, W 7, W\* 1, D 3, M 1, FM 1, F+F 5, F- 4, HHd 3, AAd 5, At 2, Pl 1, Pop 4, RT uncol 159, RT color 267.

This patient was a schizophrenic with no relieving features and with no apparent changes between tests. Perseveration and poverty of ideas and response were the most outstanding characteristics. Insecurity about the adequacy of his response seemed to be the underlying theme throughout his performance.

Case 6 (Area 6\*, 8\*): Preoperative: R 11, W 8, W\* 1, D 2, M 1, k 0, F+F 6, F- 0, Fc 1, FC 1, CF 1, C 1, HHd 1, AAd 4, At 2, Obj 1, Geo 2, Color 1, Pop 4, RT uncol 124, RT color 185.

Postoperative R2: R 14, W 10, W\* 2, D 2, M 1, k 1, F+F 6, F- 3, Fc 1, FC 1, CF 1, HHd 2, AAd 7, At 3, Obj 1, Geo 1, Color 0, Pop 5, RT uncol 87, RT color 71.

This patient was an unproductive schizophrenic with hollow ambition unsupported by ability, very few movement responses, but an inclination towards outgoingness which remained unaltered by the operation. The additional F- responses after operation indicated an inability to adjust to the reality of the task and at the same time some loss of control over his intellectual functioning.

Case 7 (Area 8, 9\*, 10\*): Preoperative: R 41, W 7, W\* 0, D 34, Dd 0, M 5, FM 3, m 1, k 1, K 0, FK 6, F+F 22, F- 1, C' 0, FC 1, C 1, HHd 8, AAd 19, At 1, Obj 6, Pl 0, Na 3, Geo 0, Clouds 4, Others 0, Pop 6, RT uncol 112, RT color 157.

Postoperative R2: R 35, W 2, W\* 2, D 29, Dd 2, M 3, FM 2, m 0, k 1, K 1, FK 0, F+F 21, F- 2, C' 4, FC 1, C 0, HHd 11, AAd 14, At 1, Obj 2, Pl 2, Na 1, Geo 2, Clouds 1, Others 1, Pop 3, RT uncol 57, RT color 65.

Before operation this patient was compulsive and self-conscious, given to introspective moods and to impulsiveness and in general was more responsive to his own cravings and urges than to social interaction. After operation he became even less sensitive to promptings from without, less introspective but more prone to uncontrolled free-floating anxiety. Impulsiveness declined but there was an increase in the tendency toward depression. Although his outward behavior was more marked by withdrawal, his instinctive trends were not so marked in that direction. It is thus possible that the operation may have set his instinctual drives into opposition against his assumed role in society. By awakening dormant extratensive drives, the patient was less capable of adjusting to the intratensive role he had previously adopted.

Case 8 (Areas 8\*, 9\*, 10\*, 46\*): Preoperative: R 13, W 1, W\* 1, D 10, Dd 1, M 1, F+F 12, F- 0, Fc 0, C' 0, HHd 7, AAd 5, Obj 1, Pop 2, Rej 3, RT uncol 129, RT color 115.

Postoperative R2: R 20, W 2, W\* 1, D 16, Dd 1, M 1, F+F 16, F- 1, Fc 1, C' 1, HHd 7, AAd 12, Obj 1, Pop 3, Rej 0, RT uncol 59, RT color 48.

This individual was highly constricted and rather limited both before and after operation showing very little internal fantasy life and very little outgoingness. However, after operation he improved somewhat in his outgoingness, became a little more tactful and a little more responsive to external stimulation although not always in a controlled manner. He showed somewhat better mental efficiency at the expense of a good deal of stereotypy. He became more sociable and more courteous without an increase in content. The striking thing in his record was that after operation he became more cooperative and less inhibited by his fears and anxieties to the point that he refused none of the cards, while before operation he refused three cards. One of the cards which he rejected was card VI (sex symbols) but after operation he was capable of responding to this card. The actual content of his responses remained practically the same in the retest, but they emerged in a much clearer

fashion without being shrouded by the "veil" which characterized his pre-treatment responses; for example, in card III the answer in the pre-test was: "Two figures, two human figures, hands here but they're not shape of hands covered with 'mitts. They are not doing any work. They are not playing. They have hands down. I don't know what this is." In the post-test the response was: "Two humans with boxing gloves on." There seemed to be more forthrightness and security in his responses to the second giving of the test. These gains were not without counterbalancing losses; he seemed less accurate in his evaluation of his environment (increase in F-).

Case 9 (Control): Original test: R 16, W 12, W\* 0, D 4, M 2, FM 3, F+F 6, F- 3, CF 2, HHd 2, AAd 9, At 5, Pop 3, RT uncol 55, RT color 68. Postoperative R2: R 12, W 9, W\* 2, D 1, M 0, FM 0, F+F 6, F- 6, CF 0, HHd 1, AAd 5, At 6, Pop 2, RT uncol 98, RT color 115.

This patient was a rather inhibited, limited individual initially and became even more so on retest. He lost whatever spontaneity and capacity that he had in the first test and became much more careless and inefficient in his evaluation of the outside world on the retest. His mental efficiency declined considerably and he seemed to be incapable of doing anything spontaneously because of the extreme rigidity which was set up and kept him bound to his stereotyped approach to life.

Case 11 (Control): Original test: R 24, W 8, W\* 1, D 14, Dd 1, M 0, FM 5, m 1, F+F 12, F- 2, C' 0, FC 1, CF 2, C 1, H 0, AAd 17, Obj 0, Pl 1, Na 2, Blood 1, Clouds 2, Color 1, Pop 6, RT uncol 87, RT color 90. Postoperative R2: R 16, W 7, W\* 1, D 7, Dd 1, M 1, FM 3, m 0, F+F 8, F- 1, C' 1, FC 0, CF 2, C 0, H 1, AAd 7, Obj 1, Pl 4, Na 1, Blood 1, Clouds 1, Color 0, Pop 3, RT uncol 104, RT color 95.

This patient decreased in responsiveness on the retest and showed changes both for the better and worse. He showed greater interest in people in the second test but less control of his affective responsiveness and some indication of depressive tendencies. The degree of his stereotypy decreased. In general he was beset by neurotic conflicts as well as by underlying psychotic trends. He was quite impulsive and anxious at both test periods.

Case 12 (Control): Original test: R 32, W 2, W\* 0, D 24, Dd 3, S 3, M 1, FM 2, F+F 23, F- 2, Fc 2, FC 1, CF 1, HHd 4, AAd 21, At 2, Obj 4, Pl 1, Pop 3, Rej 0, RT uncol 150, RT color 112. Postoperative R2: R 17, W 6, W\* 1, D 8, Dd 1, S 1, M 1, FM 0, F+F 12, F- 4, Fc 0, FC 0, CF 0, HHd 3, AAd 8, At 0, Obj 6, Pl 0, Pop 2, Rej 1, RT uncol 172, RT color 133.

In the original test this patient possessed a dilated personality, being capable of responding to both internal as well as external stimulation, but some immature tendencies were also apparent indicating either an infantile or a stereotyped approach to life. In the retest his personality was impoverished, losing in quantity as well as in the breadth of personality responsiveness. He became less capable of dealing with reality, rejected one card, and in general showed indications of poorer performance in the post-test. Whether this was owing to a loss of interest in the test, or whether it was attributable to an actual loss of zest and outgoingness could not be determined.

Case 13 (Area 9°, 10°, 45, 46): Preoperative: R 22, W 6, W\* 1, D 11, Dd 4, S 0, M 6, FM 1, m 2, FK 1, F+F 8, F- 1, Fc 1, c 1, CF 1, HHd 10, AAd 4, Obj 2, Pl 1, Na 4, Fire 1, Pop 1, RT uncol 225, RT color 255. Postoperative R2: R 18, W 4, W\* 2, D 11, Dd 0, S 1, M 4, FM 2, m 0, FK 0, F+F 10, F- 0, Fc 2, c 0, CF 0, HHd 8, AAd 7, Obj 3, Pl 0, Na 0, Fire 0, Pop 5, RT uncol 95, RT color 108.

This patient changed markedly after operation. He showed a reduction in the amount of outgoingness and less preoccupation with the bizarre, a reduction in the

tendency to be introspective and brooding, and less internal conflict. His fantasy life was now under better control but the little responsiveness for emotional stimulation from the outside which he originally possessed disappeared. Instead of being worrisome, introspective, and somewhat bizarre in his thinking, he became more restricted in his interests, less capable of emotional interplay with others but much more amenable to social contacts and to extra-hospital adjustment.

It is interesting to note that the actual responses did not change in their general essence. They did, however, change in the direction of greater definiteness and greater clarity and certainty and especially in loss of bizarreness. For example in card II, before operation: "Yes, it looks like a fire and people running forwards and Christ is coming in the center and the whole crowd is following, etc . . ." After operation: "These look like two persons; this, like a light-flame." (Inquiry—"Looks like they are scared—fire—persons, spread out arms.")

Case 14 (Control): Original test: R 6, W 3, W\* 1, D 2, M 2, FM 1, F+F 1, F- 1, C 1, HHd 3, AAd 2, At 1, Obj 0, Color 1, Pop 2, Rej 4, RT uncol 54, RT color 52. Postoperative R2: R 9, W 3, W\* 1, D 5, M 2, FM 0, F+F 7, F- 0, C 0, HHd 5, AAd 3, At 1, Obj 1, Color 0, Pop 2, Rej 1, RT uncol 126, RT color 115.

This patient presented a picture of either severe organic damage or of deterioration. He was a little more productive at retest but this increase was at the expense of withdrawing within his shell, limiting himself to only obvious, rigidly controlled responses. However, he was capable of responding to all but one of the cards in the second test after rejecting four cards during the first test. This would indicate that his degree of schizophrenic withdrawal varies considerably from time to time. Evidence for a depressive trend was afforded in the first test by the fact that he rejected the uncolored card and showed no differential reaction time to the colored cards.

Case 17 (Control): Original test: R 11, W 8, W\* 2, D 1, M 0, FM 1, F+F 3, F- 5, C' 1, FC 0, C 1, HHd 1, AAd 9, Color 1, Pop 2, Rej 0, RT uncol 122, RT color 96. Postoperative R2: R 13, W 6, W\* 1, D 6, M 1, FM 2, F+F 6, F- 2, C' 0, FC 2, C 0, HHd 4, AAd 9, Color 0, Pop 3, Rej 1, RT uncol 43, RT color 84.

This patient was rather limited in his responsiveness, probably suffering from an organic condition, in addition to the schizophrenic process. Certain neurotic features became quite apparent on the retest and this made his performance more variegated. His contact with reality was on a surer footing on the retest, and he showed better capacity for affective relationships with others, and less impulsiveness. He also showed a greater interest in people and fewer indications of depressive moods. In general some spontaneous improvement in his mental status was quite apparent.

Case 18 (Area 11): Preoperative: R 59, W 9, W\* 13, D 27, Dd 2, S 8, M 6, FM 6, m 0, k 1, K 1, F+F 36, F- 3, Fc 0, C' 0, FC 4, CF 1, C 1, HHd 9, AAd 12, Obj 33, Pl 3, Clouds 1, Color 1, Others 1, Pop 6, RT uncol 124, RT color 148. Postoperative R2: R 60, W 4, W\* 17, D 23, Dd 7, S 9, M 3, FM 5, m 1, k 1, K 0, F+F 37, F- 2, Fc 3, C' 2, FC 6, CF 0, C 0, HHd 7, AAd 14, Obj 36, Pl 3, Clouds 0, Color 0, Others 0, Pop 2, RT uncol 193, RT color 152.

A very meticulous, conscientious patient who had high ambition, intelligence, and drive but who apparently was incapable of bringing the conflict between his inner somewhat immature promptings and his high external goals to an even balance. As a result of this conflict between his high ideals and some of his inner promptings which he regarded as being below these ideals he was in a continuous state of apprehension and anxiety, and his achievement in life had been interfered with. He worked at tasks not so much to accomplish them as to get away from his inner con-

flicts. With regard to this tendency not much change occurs after operation except that he became a little more depressed and a little more sensitive to stimulation from without. At the same time he seemed to get more control over his emotional promptings and held them under better check. His interest was primarily in objects rather than in living things. He showed a rather rich variety of types of responses which indicated that he was capable of having an interest in a wide variety of topics. Intellectual acumen did not seem to have suffered very much after operation. Although he seemed to be making an effort to get into greater rapport with the outside world, he at the same time exhibited less communality in his responses. His neurotic anxiety lessened somewhat after operation but it was replaced by depressive tendencies which were more in keeping with his psychotic trend. It is clear that his perfectionistic tendencies showed no change after operation. He still concentrated on the interpretation of every single spot on the blot and tried to incorporate all of them in his responses.

Case 19 (Area 45<sup>a</sup>): Preoperative: R 18, W 11, W\* 2, D 5, Dd 0, M 3, FM 1, k 1, F+F 10, F- 1, Fc 1, C' 1, FC 0, H 5, AAd 6, At 0, Obj 4, Pl 1, Na 1, Other 1, Pop 4, RT uncol 56, RT color 123.

Postoperative R<sub>2</sub>: R 12, W 5, W\* 2, D 4, Dd 1, M 2, FM 0, k 0, F+F 4, F- 1, Fc 2, C' 0, FC 3, H 2, AAd 4, At 1, Obj 4, Pl 1, Na 0, Other 0, Pop 3, RT uncol 49, RT color 68.

A rather constricted patient with neurotic trends which seemed to have lessened in the postoperative period, so rendering him a little more sociable and more interested in things outside himself. Postoperatively he seemed to come more into contact with reality by exhibiting more tact and more controlled affectivity, together with a loss in the factors indicating immaturity and anxiety. Original indications of depression disappeared at retest.

He was more anxious, more ambitious, and more colorful before operation, becoming less anxious, less ambitious, and more matter of fact on retest. He was more tactful and better capable of handling emotional stimulation after operation. There was originally some evidence of contamination in his responses indicative of a definite schizophrenic trend but these disappeared in the retest.

Case 21 (Area 10): Preoperative: R 24, W 5, W\* 1, D 15, Dd 3, FM 0, K 1, F+F 19, c 0, FC 3, CF 1, HHd 4, AAd 15, At 1, Obj 2, Pl 0, Na 0, Blood 1, Clouds 1, Pop 5, RT uncol 105, RT color 47.

Postoperative: R<sub>2</sub>: R 15, W 4, W\* 0, D 10, Dd 1, FM 3, K 1, F+F 8, c 1, FC 1, CF 1, HHd 1, AAd 11, At 1, Obj 0, Pl 1, Na 1, Blood 0, Clouds 0, Pop 5, RT uncol 45, RT color 73.

This patient presented a schizophrenic picture of rather meager internal life based upon a personality structure which originally showed very little receptivity to inner strivings or to external stimulation. After the operation his personality emerged as introversive in its instinctual trend but extroversive in his actual behavior. As a result, he could not be very productive even though he had capacities for integrating and synthesizing his activities; the internal conflict consumed his energies so that none were left with which to pursue his organized plans. He was stereotyped and became more so after operation and the little capacity that he had originally to analyze situations seemed to have been lost after operation. His responses were rather banal and crude. He changed from a depressive psychotic to one capable of neurotic shock and anxiety. His preoperative rigidity loosened up a bit after operation. He became less mature in his strivings and revealed after operation the true undeveloped immature nature of his introversive tendencies which had gone unrecognized heretofore. Whatever capacity he had to control his affect before operation diminished and a tendency for free-floating anxiety appeared. In general, he lost his preoperative psychotic features which were replaced by more manageable neurotic tendencies.

Case 23 (Control): Original test: R 15, W 2, W\* 1, D 9, Dd 3, M 1, m 1, k 2, FK 1, F+F 7, F- 1, FC 2, HHd 5, AAd 4, Obj 3, Na 1, Geo 2, Pop 2, RT uncol 67, RT color 71.

Postoperative R2: R 24, W 3, W\* 1, D 14, Dd 6, M 3, m 2, k 5, FK 1, F+F 9, F- 2, FC 2, HHd 9, AAd 5, Obj 4, Na 0, Geo 6, Pop 3, RT uncol 42, RT color 56.

This patient was a highly withdrawn individual who had led an encapsulated existence throughout life despite his tendency to permit certain emotional attachments under very highly controlled conditions. There was little change in this regard after operation and the only outstanding change was a slight tendency for showing more bizarre schizophrenic thought and behavior. He was incapable of carrying out organized activities because small minute details distracted his attention. His productivity level remains relatively unchanged on retest. As a whole it can be said that whatever changes occurred were of no great consequence.

Case 25 (Area 8, 9, 10<sup>4</sup>, 46): Preoperative: R 18, W 2, W\* 1, D 12, Dd 2, S1, M 1, FM 1, F+F 14, F- 1, C' 1, FC 0, CF 0, C 0, HHd 10, AAd 8, Obj 0, Pl 0, Color 0, Pop 3, RT uncol 123, RT color 403.

Postoperative R2: R 25, W 3, W\* 1, D 18, Dd 3, S 1, M 0, FM 0, F+F 20, F- 1, C' 1, FC 1, CF 1, C 1, HHd 4, AAd 10, Obj 9, Pl 1, Color 1, Pop 4, RT uncol 58, RT color 73.

This patient was rather a worrisome individual, responding only to his own inner strivings and not at all to promptings from the outside. After operation he ceased to be responsive to his inner cravings and desires, and was completely at the mercy of external forces which he was unable to control. He became less capable of responding to the totality of the situation when human beings or living things were involved although his general interest in people and life had increased. He was still as constricted and limited in his output as he was before except for the fact that he now had an extroversive trend instead of the introversive trend which dominated him before the operation. Although he was frankly psychotic preoperatively he manifested certain neurotic features which seemed to diminish in intensity in the postoperative test.

Case 26 (Control): Original test: R 16, W 2, W\* 1, D 10, Dd 3, S 0, M 1, FM 0, F+F 13, F- 2, HHd 4, AAd 9, Obj 0, Pl 2, Na 1, Pop 2, Rej 1, RT uncol 160, RT color 142.

Postoperative R2: R 25, W 2, W\* 1, D 19, Dd 2, S 1, M 6, FM 1, F+F 16, F- 2, HHd 11, AAd 13, Obj 1, Pl 0, Na 0, Pop 1, Rej 0, RT uncol 225, RT color 155.

This patient is a schizophrenic who exhibited a rather high degree of rigidity at first, but reduced it somewhat at retest. He also showed a rather strong introversive trend and a total lack of capacity for responding to emotional stimulation from without. However, since he had no way of controlling his inner strivings he was at the mercy of his environment and his only way of counteracting was to withdraw to his internal fantasy. All external stimulation was translated in terms of egocentric internal responses which he was incapable of controlling. No change was observed in his personality in the retest.

Case 29 (Control): Original test: R 8, W 2, D 6, FM 1, F+F 4, F- 3, CF 0, HHd 1, A 3, At 4, Pop 2, Rej 3, RT uncol 491, RT color 486.

Postoperative R2: R 6, W 3, D 3, FM 1, F+F 3, F- 1, CF 1, HHd 1, A 2, At 3, Pop 2, Rej 5, RT uncol 230, RT color 308.

This patient was very limited in his output, lacking human empathy and having no interest in interpersonal relationships. He was instinctually more receptive to his inner strivings but tended to direct his energies in an extroversive direction. In this regard there was a little change between tests. He was quite rigid and incapable of

complying with the test requirements to such an extent that he rejected three cards in the first test and five cards in the second test. The paucity of responses led to great difficulty in interpretation. In general little, if any, change occurred between tests.

Case 31 (Area 9): Preoperative: R 12, W 5, W\* 1, D 6, S 0, M 1, FM 1, F+F 8, F- 0, FC 1, C 1, HHd 2, AAd 7, Obj 1, Blood 1, Other 1, Pop 4, Rej 0, RT uncol 36, RT color 49.

Postoperative R2: R 10, W 6, W\* 1, D 2, S 1, M 1, FM 1, F+F 4, F- 4, FC 0, C 0, HHd 2, AAd 8, Obj 0, Blood 0, Other 0, Pop 5, Rej 1, RT uncol 101, RT color 84.

This patient was a rather limited, highly constricted individual with little or no spontaneity and very rigid in her approach to life. As a result of the operation, she lost whatever responsiveness she did have to emotional stimulation and became somewhat less capable of dealing with her environment because of the fuzzy appearance that the world presented to her after operation. Although she was capable of accepting some stimulation from within her own personality, there was nothing to counterbalance this stimulation from without nor to control it. The tendency to give crude, undifferentiated and popular responses was enhanced by the operation, characterizing her as a person who responded to her world only in the crudest unanalytical fashion. The degree of stereotypy also increased in the postoperative test.

Case 32 (Areas 8, 9, 10): Preoperative: R 71, W 31, W\* 3, D 28, Dd 2, S 7, M 1, FM 5, m 2, k 3, FK 2, F+F 38, F- 3, Fc 6, C' 1, c 0, FC 5, CF 5, HHd 4, AAd 16, At 1, Obj 31, Pl 4, Na 5, Geo 6, Others 4, Pop 7, RT uncol 32, RT color 20.

Postoperative R2: R 34, W 12, W\* 2, D 18, Dd 1, S 1, M 1, FM 5, m 0, k 0, FK 0, F+F 22, F- 2, Fc 1, C' 0, c 1, FC 2, CF 0, HHd 3, AAd 12, At 1, Obj 12, Pl 0, Na 2, Geo 3, Other 0, Pop 10, RT uncol 62, RT color 50.

Before operation this patient exhibited a rather high level of responsiveness to the outside world characterized by a rather infantile level of inner fantasy and strivings. She paid for this infantile indulgence by having moments of conflict regarding her role in life. On the other hand, she was capable of handling her impulsive emotional outbursts on a rather adequate level, although at some cost to herself in the form of anxiety and conflict. She possessed a considerable amount of tact and a capacity to control her sensuous responsiveness. She was basically an introverted individual but in actual life she tried to play the role of an extroverted individual. Despite certain infantile traits she was capable of controlling her emotional responsiveness and capable of exhibiting considerable tact and capacity to understand her own feelings as well as the feelings of others before operation. After operation, although she still remained egocentric internally, she no longer had the advantages that she presented before. She had lost some of her tact and some of her introspectiveness. Stimulation from the outside did not cause her now as much difficulty as previously since her general level of reactivity had declined.

Case 34 (Control): Original test: R 42, W 8, W\* 2, D 24, Dd 6, S 2, M 3, FM 4, K 1, F+F 22, F- 2, Fc 2, c 1, FC 4, CF 2, C 1, HHd 7, AAd 20, At 0, Obj 8, Pl 0, Na 4, Geo 0, Cloud 2, Color 1, Other 0, Pop 7, RT uncol 60, RT color 19.

Postoperative R2: R 34, W 5, W\* 1, D 23, Dd 4, S 1, M 3, FM 2, K 2, F+F 13, F- 4, Fc 3, c 1, FC 4, CF 2, C 0, HHd 4, AAd 16, At 1, Obj 7, Pl 1, Na 1, Geo 1, Cloud 2, Color 0, Pop 7, RT uncol 37, RT color 28.

This patient was basically introverted but had adopted an extroverted type of adjustment. This was achieved at the expense of a certain amount of free-floating anxiety, which led to an intellectualization of her personality difficulties. There was very little change in the retest except for a slight reduction in impulsiveness and in

immaturity of inner strivings and urges. There was, on the other hand, some reduction in the clarity with which reality was perceived.

Case 35 (Control): Original test: R 12, W 5, W\* 1, D 6, S 0, FM 1, F+F 9, F- 1, Fc 0, FC 1, HHd 1, AAd 8, At 3, Obj 0, Pop 3, Rej 1, RT uncol 22, RT color 39.

Postoperative R2: R 16, W 3, W\* 0, D 12, S 1, FM 2, F+F 10, F- 2, Fc 2, FC 0, HHd 1, AAd 9, At 2, Obj 4, Pop 3, Rej 0, RT uncol 128, RT color 125.

This patient was a rather unimaginative, colorless individual, unresponsive to her own strivings as well as to external stimulation. On both tests she was rigid and constricted. There was a poverty of ideas which was unchanged. On retest there was a slower reaction time and a loss in receptivity to emotional stimulation for which was substituted a capacity for tactful dealing with the environment.

Case 36 (Areas 10, 11, 45, 46, 47): Pre-operative: R 28, W 8, W\* 1, D 17, Dd 1, S 1, M 3, FM 1, m 1, FK 3, F+F 13, F- 2, Fc 1, C' 0, FC 4, CF 0, HHd 5, A 6, At 2, Obj 9, Pl 1, Na 5, Fire 0, Pop 2, RT uncol 25, RT color 14.

Postoperative R2: R 24, W 3, W\* 1, D 19, Dd 0, S 1, M 2, FM 4, m 0, FK 0, F+F 10, F- 0, Fc 1, C' 1, FC 5, CF 1, HHd 3, A 10, At 0, Obj 8, Pl 2, Na 0, Fire 1, Pop 4, RT uncol 18, RT color 14.

This patient possessed a high degree of responsiveness to both her own inner promptings as well as to stimulation from without. She showed signs of inner conflict accompanied by a definite tendency towards introspection. This capacity for resorting to introspection to alleviate her conflicts did not succeed too well since she had to resort to loss of contact with reality in order to resolve the conflicts, and definite indication of anxiety also emerged. After operation she lost her introspective tendencies and was somewhat less rigid but only by sacrificing some degree of maturity in thought and action, since the majority of her inner strivings were reduced to an immature level. She was also less capable of organizing her environment into larger units but the organization that she did effect was a little more tied to reality, and more practical in nature than it was before operation. In general, her receptivity to promptings or strivings from within as well as her receptivity to stimulation from without was not on as mature a level as it was before operation. She showed better contact with reality and responded in a manner indicative of greater communality with her fellows.

Case 38 (Venous ligation involving areas 6, 8, 9, 10): Preoperative: R 13, W 4, W\* 0, D 7, Dd 0, S 2, M 2, FM 2, K 0, FK 1, F+F 7, F- 1, c 0, FC 0, C 0, HHd 5, AAd 8, At 0, Obj 0, Na 0, Color 0, Pop 2, Rej 1, RT uncol 485, RT color 178.

Postoperative R2: R 33, W 6, W\* 2, D 13, Dd 6, S 6, M 1, FM 2, K 1, FK 1, F+F 18, F- 5, c 1, FC 3, C 1, HHd 14, AAd 12, At 1, Obj 2, Na 2, Color 1, Pop 2, Rej 0, RT uncol 99, RT color 99.

Before operation this patient was somewhat limited in output, giving only thirteen responses. This low level of responsiveness indicated a withdrawn, though practical-minded individual with definite resistances and oppositional trends limiting her productivity. After operation, the oppositional tendencies were still apparent but she became much more responsive, more than doubling her number of responses. She tended to become absorbed in insignificant aspects of her environment and became more communicative about these insignificant aspects of her life. The increase in responsiveness occurred largely in the realm of anxiety-reflecting responses and in outgoingness. This increase in outgoingness was very marked and is generally well under control except for one impulsive outburst. The increase in responses also brought about a much higher degree of rigidity and some indication of free-floating anxiety, as well as a softer focus in her perceptual capacities and ability to understand her environment. At the same time an increase in the number of responses which indicated a capacity to deal with emotional stimulation arose and an indication

of some tendency towards depressive responsiveness also occurred. In general the operation brought the patient out of her preoperative shell, but did so at the expense of less intellectual control and increase in anxiety and depressive moods.

Case 39 (Control): Original test: R 18, W 8, W\* 1, D 8, Dd 1, M 2, FM 2, F+F 9, F- 1, Fc 1, FC 1, CF 1, C 1, HHd 3, AAd 10, At 3, Obj 0, Pl 1, Clouds 1, Pop 6, RT uncol 44, RT color 33.

Postoperative: R2: R 23, W 5, W\* 1, D 16, Dd 1, M 3, FM 0, F+F 18, F- 0, Fc 1, FC 0, CF 0, C 1, HHd 7, AAd 12, At 0, Obj 3, Pl 0, Clouds 0, Pop 1, RT uncol 156, RT color 154.

This patient was inclined to view her environment in a rather crude undifferentiated manner on the first test with relatively little attention paid to practical matters. Her strivings and inner promptings were similarly on an immature level but she showed some capacity for emotional adjustment and tactfulness, although there were indications of impulsive behavior as well. Her interest in human beings was at a low ebb and she showed several evasive responses and several indicating anxiety. On retest considerable improvement became apparent. She became more practical in her outlook, more accurate in the perception of reality, more mature in her strivings, but she suffered some loss in capacity to control her emotional stimulation. The indications of anxiety disappeared, but her responses became less popular and more individualistic indicating a trend away from the usual and expected. In general, this patient improved considerably between the tests.

Case 40 (Area 24\*): Preoperative: R 28, W 7, W\* 1, D 19, Dd 1, S 0, M 5, FM 2, F+F 11, F- 3, Fc 1, C 0, FC 2, CF 2, C 2, HHd 10, A 5, At 4, Obj 5, Na 1, Geo 1, Fire 1, Blood 1, Other 0, Pop 3, Rej 0, RT uncol 156, RT color 41.

Postoperative R2: R 12, W 2, W\* 0, D 8, Dd 1, S 1, M 0, FM 0, F+F 10, F- 0, Fc 0, c 1, FC 0, CF 0, C 1, HHd 4, A 2, At 0, Obj 3, Na 0, Geo 0, Fire 0, Blood 1, Other 1, Pop 1, Rej 1, RT uncol 79, RT color 223.

Preoperatively this patient was quite communicative, giving twenty-nine responses and exhibited a rather practical-minded approach to life. She was receptive toward her own striving and prompting and was capable of responding adequately to emotional stimulation from without. Some indications of evasiveness and anxiety were apparent and a certain dysphoric tendency and depression prevented her from sizing up reality adequately. After operation her responsiveness decreased to less than half of her former performance, her inner urges and promptings were completely repressed but she no longer suffered from inability to evaluate reality correctly. She lost all her capacity for emotional responsiveness excepting on the impulsive level. She became more suspicious and negativistic and showed neurotic color shock instead of the original depressive tendencies. She found difficulty in controlling her emotions and would have been happier to be completely withdrawn within her own shell. She did not find it possible to trust people at all times because she could not understand them which gave rise to this alternating attitude of suspiciousness versus trust. It is doubtful whether the postoperative test is representative of her personality. Accepting these data on their face value, it appeared that the operation reduced her mental life considerably. In fact the operation impoverished it to such a point that there was hardly anything left except the clinging to formal ways of responding. Only one uncontrolled texture response and one uncontrolled pure-color response were given, which indicated helplessness in the face of external stimulation.

Case 42 (Area 11): Preoperative: R 20, W 6, D 9, Dd 4, S 1, F+F 9, F- 4, Fc 2, c 1, C' 1, FC 1, CF 1, C 1, Hd 1, AAd 4, At 7, Obj 3, Pl 1, Na 2, Blood 1, Color 1, Pop 1, RT uncol 57, RT color 54.

Postoperative R2: R 13, W 11, D 2, Dd 0, S 0, F+F 3, F- 9, Fc 0, c 0, C' 1, FC 0, CF 0, C 0, Hd 0, AAd 3, At 8, Obj 0, Pl 1, Na 1, Blood 0, Color 0, Pop 0, RT uncol 71, RT col 100.

This patient was quite communicative preoperatively giving twenty responses. She exhibited considerable interest in the significant aspects of the blots and was some-

what negativistic. She rejected her own inner strivings but showed considerable capacity for tact and for outgoingness. She was quite rigid and showed a lack of capacity for interpreting her environment correctly. Also present were a considerable amount of impulsiveness and a dysphoric affect. After operation her responsiveness dropped to nearly half of what it was before operation. Most of her responses indicated a rather crude unintegrated approach. Her contact with reality dropped to an even lower level and she became much more rigid. Her capacity for tact vanished and so did her tendency to dysphoric moods as well as her impulsiveness. The content of her responses was still primarily anatomical and did not represent even as wide a variety of content as she had before operation.

Case 47 (Area 44): Preoperative: R 9, W 3, W\* 0, D 6, FM 0, F+F 2, F- 1, c 0, C' 1, FC 1, CF 2, C 2, H 1, AAd 3, At 1, Obj 1, Na 1, Color 1, Other 1, Pop 0, Rej 3, RT uncol 96, RT color 74.

Postoperative R2: R 12, W 6, W\* 1, D 5, FM 1, F+F 6, F- 1, c 1, C' 0, FC 0, CF 1, C 2, H 1, AAd 6, At 0, Obj 3, Na 1, Color 1, Other 0, Pop 1, Rej 1, RT uncol 85, RT color 110.

This patient was so low in productivity that either functional deterioration or organic defect was suspected. She inhibited her inner strivings completely but did permit herself to respond to external stimulation, although generally in an uncontrolled impulsive manner. After operation she lost control over her responsiveness, gave more commonplace responses but became more dilated in her expression of personality trends. By decreasing her rigid control, she increased her capacity for responding impulsively and permitted expression of her less mature inner promptings. This general reduction in maturity indicates a definite worsening of personality functioning. The data are so meager that these statements must remain tentative.

Case 49 (Area 10, 11\*, 46\*): Preoperative: R 17, W 9, W\* 1, D 7, S 0, M 1, FM 2, k 1, FK 1, F+F 8, F- 1, Fc 1, FC 1, CF 1, HHd 1, AAd 8, At 1, Obj 2, Pl 2, Na 0, Geo 2, Pop 2, RT uncol 187, RT color 157.

Postoperative R2: R 17, W 4, W\* 5, D 7, S 1, M 1, FM 1, k 0, FK 0, F+F 11, F- 1, Fc 0, FC 1, CF 2, HHd 1, AAd 7, At 0, Obj 3, Pl 4, Na 1, Geo 1, Pop 4, RT uncol 75, RT color 75.

Before operation this patient tended to inhibit her own inner strivings and urges and permitted only the less mature ones to emerge. She was quite introspective and brooding and tended to intellectualize her anxieties. She was tactful in her interpersonal interactions and possessed fairly good control of her emotional responsiveness. Because of her shut-in life she exhibited very little interest in people and tended to be somewhat negativistic. She changed very little in total responsiveness after operation but altered her style of response becoming more constricted and utilizing less of the categories available to her, especially those which indicate free-floating anxiety as well as introspection arising from anxiety sources. In place of this rather manifold type of response which characterized her preoperatively, she was, after operation, capable of responding only with the rather noncommittal form of responses. The operation apparently robbed her of a certain amount of colorfulness even though it reduced her anxiety level. She exhibits still less interest in people after operation and is a little more noncommittal in the type of material with which she chooses to respond. The operation resulted in greater constriction with a slight decrease in the capacity to analyze the blots in terms of their details. The patient was capable of seeing less human details after operation. There was a strong drive to give organized whole responses extremely out of keeping with the barrenness of the subject's mental content, indicating hollow contentless ambition but this tendency was reduced by the operation.

## SUMMARY

An examination of the Rorschach records of the patients subjected to operation indicated that some of the subjects have been altered in their personality trends while others remained unchanged. No definite pattern of changes emerged. Furthermore, the control patients frequently showed the same types of changes observed in the operatee group.

In view of these considerations a statistical analysis was attempted of the individual Rorschach factors before and after operation. In this analysis each Rorschach factor was dealt with separately, and no groupings were made as was done for obtaining the correlations reported above. The most pronounced change was found to occur in reaction time. In this measure the operatees showed a greater decline than was observed in the control group. In the other factors no statistically significant findings emerged. Some trends, however, were noted. The factors which showed a tendency to decrease in the operatee group after operation are: R, W, M, m, k, FK. The factors that tended to increase after operation are W\* and F-. The factors that tended to show a decrease were those that are said to be primarily associated with anxiety, ambitiousness, conflict, and introspection. The factors that tended to show an increase are those which are thought to have to do with lessening of ambition and lowering of standards of accuracy.